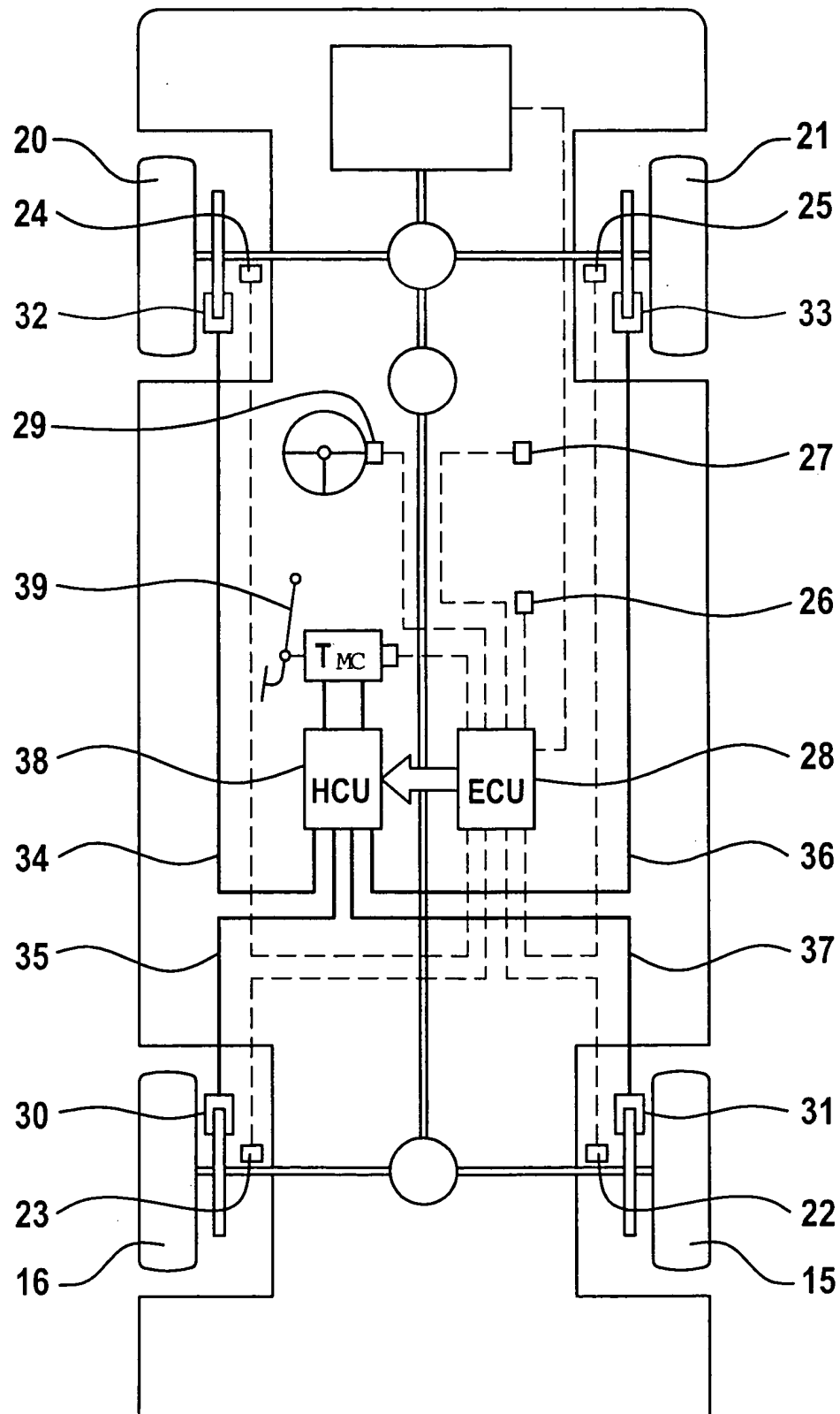


Fig. 1



2/5

Analysys Tsp_filtered_DPsiP

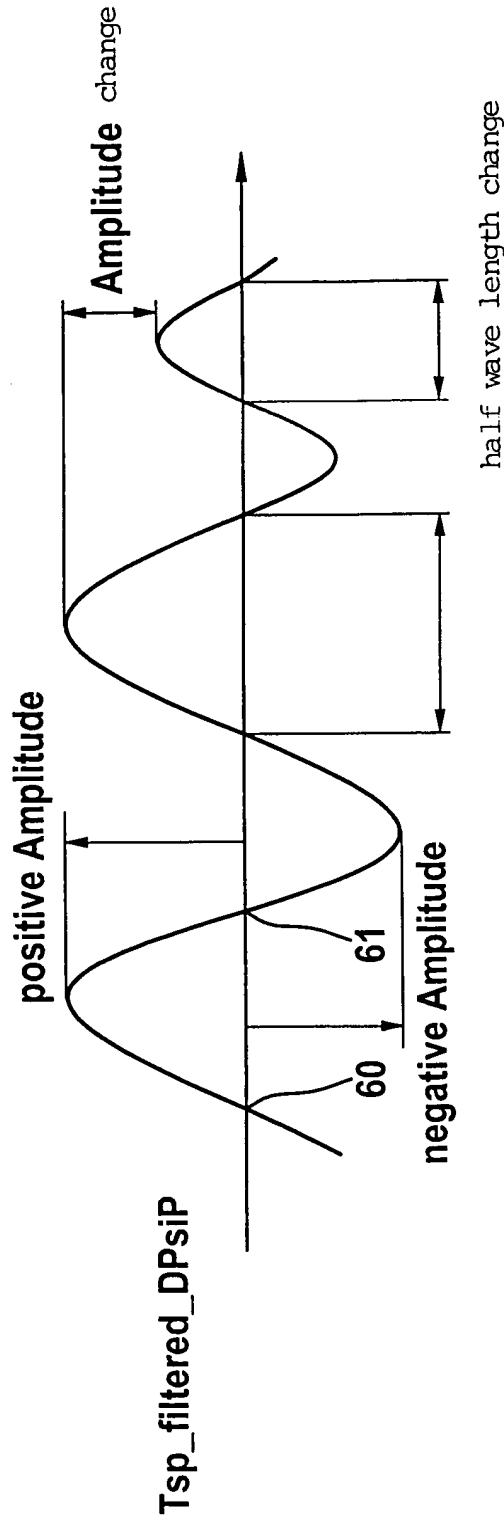


Fig. 2

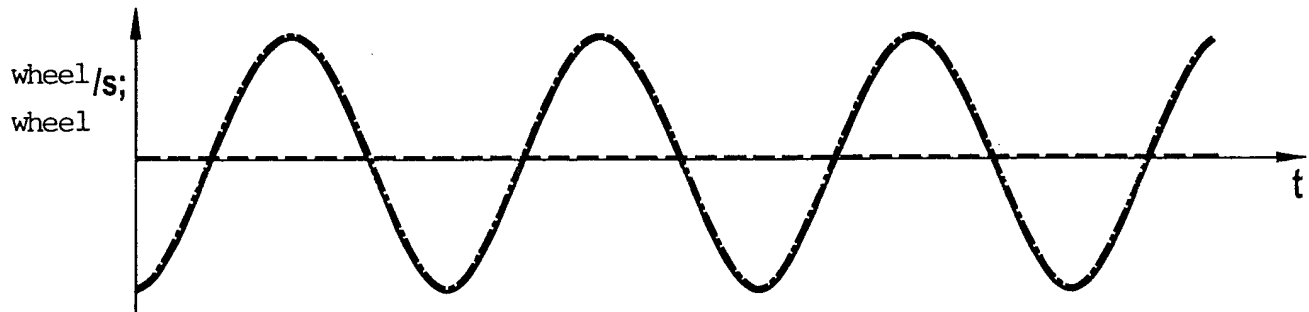
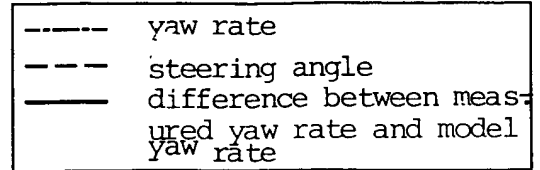
Each half wave is analysed:

- **Amplitude** exceeds allowable threshold?
- **Amplitude** decreases too much?
- Is half wave length in the permitted range ? (\Rightarrow Frequency ~ 0.5 to 1.5 Hz)
- Does half wave length change too much ?

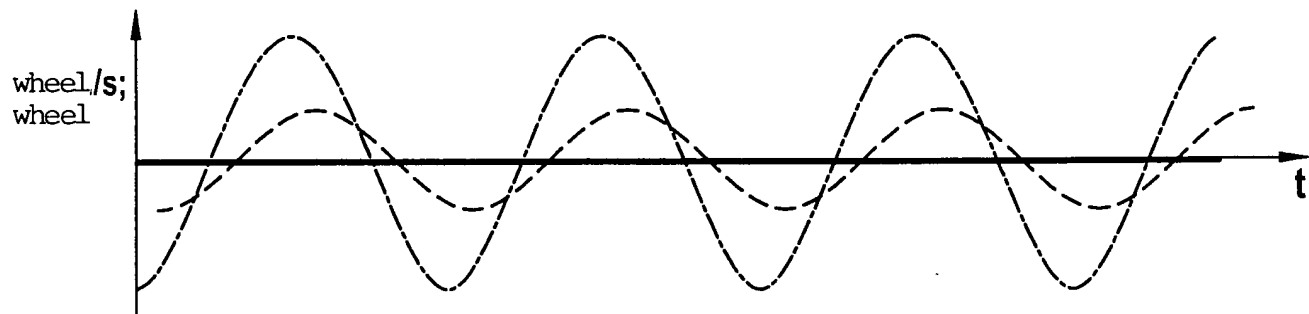
3/5

Fig. 3

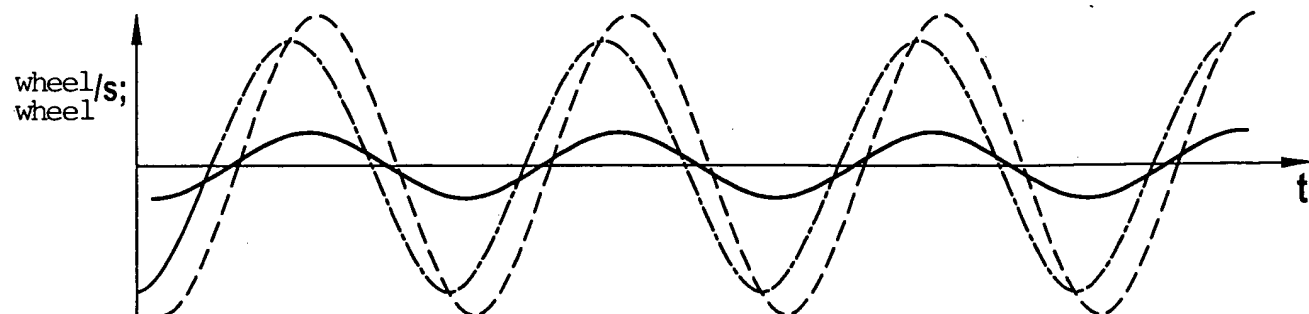
- a) Snaking of car-trailer combination; Oscillation without corresponding steering angle variation



- b) Slalom maneuver; oscillation is produced by steering angle variation alone; difference equals zero because vehicle is able to follow the model



- c) Slalom maneuver (dynamic); oscillation is produced by steering angle variation alone; difference equals zero because vehicle is no longer able to follow the model



Filtered model yaw rate deviation

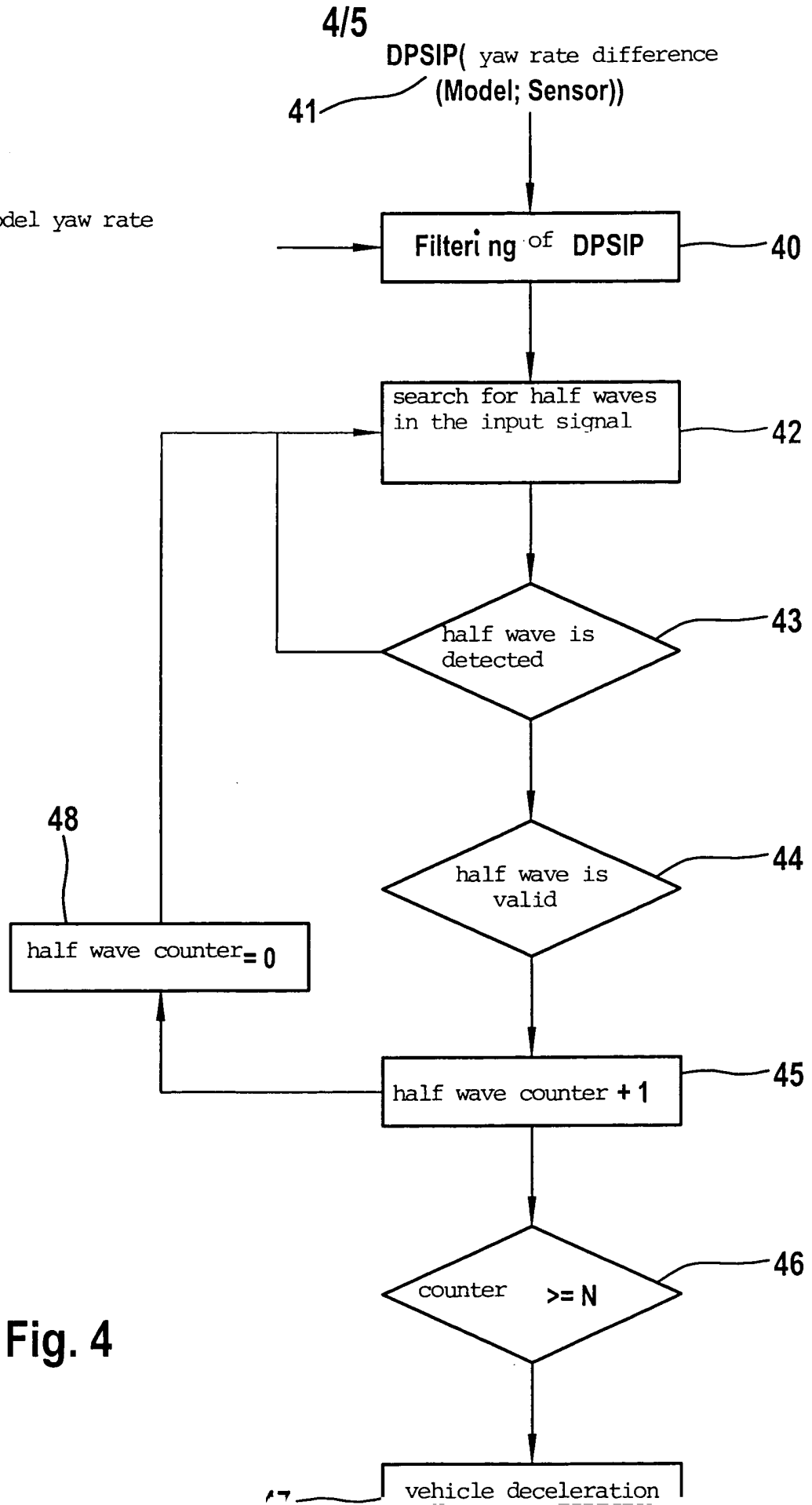
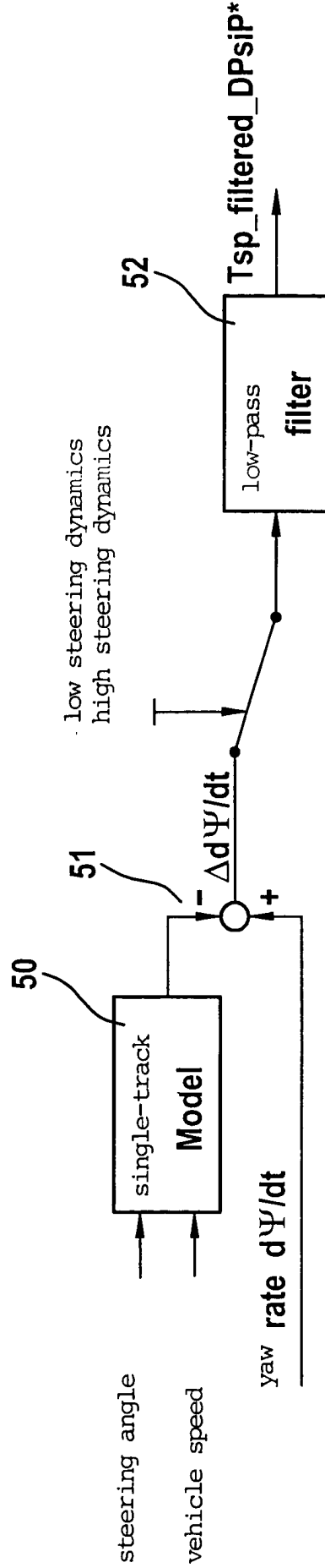


Fig. 4

Calculation of Tsp_filtered_DPsiP



5/5

- Deviation is calculated from the measured yaw rate and the model yaw rate.
- Spurious detection is prevented at high steering dynamics.
- Irrelevant frequency components ($\sim 1.5\text{Hz}$) are filtered out.

Fig. 5

$Tsp_filtered_DPsiP$ is the main detection signal.

* $DPsiP: \Delta d\Psi/dt$